

Bi-weekly Wetland and Stream Corridor Restoration Update

Issue 32

July 18, 2002

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Welcome to the Bi-weekly Wetland and Stream Corridor Restoration Update. This web site

- Provides current information on wetland and river corridor restoration projects
- Recognizes outstanding restoration projects
- Offers a forum for information sharing

We welcome the submission of articles and announcements related to your restoration project. Just send your write-up to EPA's contractor at restorationupdate@tetrattech-ffx.com or mail it to Rebecca Schmidt, Bi-weekly Restoration Update Coordinator, Tetra Tech, Inc., 10306 Eaton Place, Suite 340, Fairfax, VA 22030. We will carefully consider your submission for inclusion in a future update. If your submission is selected, please note that it might be edited for length or style before being posted. Because this web site is meant to be a public forum on restoration information, we cannot post any information that is copyrighted or information that advocates or lobbies for any political, business, or commercial purposes or has the appearance of doing so.

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Feature Article

License Plates to Protect the Long Island Sound

The license plates chosen for your car can help fund wetland restoration, research, and education projects. Many states now issue special license plates where a portion of the license plate fee is used for environmental restoration projects. In 1993 the Connecticut Department of Motor Vehicles began issuing Long Island Sound license plates. The plates are attractively designed with a shore scene and lighthouse and bear the words "Preserve the Sound." Money generated through issuing Long Island Sound license plates goes toward the Long Island Sound Fund. As of March 31, 2002 the Connecticut Department of Motor Vehicles had issued more than 114,000 of the license plates. More than \$4 million has been generated for the fund through the sale of Long Island Sound license plates along with proceeds from the People's Bank *Preserve the Sound* affinity credit card and individual donations.

Projects promoting the preservation and restoration of Long Island Sound can apply for funds from the license plate program. The program funds projects in four main areas: restoration and habitat protection, research, public outreach and education, and public access. Before funding is granted, each potential project must demonstrate the relationship of the project to Long Island Sound, the public benefit of the project, and the applicant's ability to implement the project. As of March 31, 2002, the fund had supported 204 projects.

Projects funded in 2002 have included everything from removing invasive reed species from Bluff Point Natural Area and Pattagansett Marsh to creating a three-dimensional model of the Long Island Sound drainage basin to be mailed at no cost to teachers at their request. One project, highlighted in the June 2002 *Sound Outlook* (the Connecticut Department of Environmental Protection's newsletter, which can be found at <http://dep.state.ct.us/olisp/soundout/soundout.htm>) involved creating a fishway over the Pond Lily Dam on the West River in New Haven. The fishway provides a passageway for fish around the dam and allows native species, including alewives, blueback herring, sea-run brown trout, and sea lamprey, access to the pond and more than 2 miles of critical upstream spawning habitat. This fishway also will be of particular educational importance because it is the first fishway constructed in an urban area. Many people will have the opportunity to observe migrating fish from a public observation platform constructed as part of the project.

Additional projects recently made possible by the Long Island Sound Fund include the following:

- The Town of Ledyard received a \$20,300 grant for a public access project in Erickson Waterfront Park. The grant money will fund the creation of a new waterfront park adjacent to Mill Cove. The park project will consist of removing dilapidated buildings and invasive plants, restoring native vegetation, constructing walking trails, and installing new interpretive educational signs and benches.
- Connecticut College received a \$21,106 grant for a research project focusing on lower Connecticut River tidal marshes. The research study, titled *Restoration Ecology of the Lower Connecticut River Tidelands: Impacts of Restoration Methodologies on Vegetation, Macroinvertebrates and Fish*, will evaluate the results of efforts to restore tidal wetlands invaded by *Phragmites australis*.
- Fordham University received a \$24,860 grant for a research project to study Connecticut tidal marshes between Fairfield and Stonington. The research study, titled *Abundance and Breeding Success of American Black Ducks, Rails and Other Waterbirds in Relation to Vegetation Cover and Invertebrates*, will evaluate factors important to bird abundance, species richness, and breeding success in the tidal marshes of Long Island Sound.
- Schooner Sound Learning in New Haven received a \$13,275 grant for an education project titled *Connecticut Generations to Long Island Sound*. The project will create a Long Island Sound educational curriculum at an existing urban after-school program for Hispanic youth.
- The City of Norwalk received a \$20,000 grant for an education project titled *Telling the Story: An Interpretive History of Calf Pasture Beach Creation*. The project involves installation of interpretive educational signs about the Norwalk coast and islands along a walking trail at Calf Pasture Beach and creation of a corresponding brochure and trail map.

For more information about the Long Island Sound license plate program, contact the coordinator, Kate Hughes, at 860-424-3034; e-mail: kate.hughes@po.state.ct.us, or visit www.dep.state.ct.us/olisp/licplate/projects.htm.

If you'd like your project to appear as our next featured article, e-mail a short description to restorationupdate@tetrattech-ffx.com.

Five-Star Restoration Projects Update

The goal of EPA's Five-Star Restoration Program is to bring together citizen groups, corporations, the Youth Conservation Corps, students, landowners, and government agencies to undertake projects that restore streambanks and wetlands. The program provides challenge grants, technical support, and peer information exchange to enable community-based restoration projects. A few Five-Star restoration projects are being revisited to see if the modest amount of funding (between \$5,000 and \$20,000) has helped the local restoration partners achieve their goals.

Project Title: Latah Creek Bank Restoration Project
Five-Star Grant: \$10,000
Grant to: Spokane County Conservation District
Location: Spokane, Washington
Grant Year: 1999

Original Project Description:

The Spokane County Conservation District will restore the stream banks and wildlife habitat along Latah Creek to demonstrate innovative restoration techniques to Spokane County residents. Fourteen partners, including private landowners, local businesses, government agencies, nonprofit groups, and the Excelsior Youth Center, will take part in the project.

Project Update:

The site chosen for the restoration project consisted of approximately 750 linear feet of eroding bank along Hangman Creek. The bank was a 40- to 90-foot bluff composed of poorly consolidated sand, silt, clay, and gravel that was being eroded by a meander of Hangman Creek. The goals for the project, established by the Spokane Conservation District, were to stabilize stream bank and reduce sediment entering Hangman Creek; restore wildlife habitat in the stream corridor; reestablish the flood-storage, sediment-trapping, and nutrient-filtering capacity of the stream; and determine the usefulness of an experimental treatment for future applications.



The District chose to use an experimental treatment to stabilize the eroding bank—cottonwood barbs. They buried the barbs in the bank to redirect the main energy of flow away from the toe of the eroding bank. The spaces between the barbs slowed the velocity of the water and allowed suspended sediments to

settle out and be deposited along the site. They also planted vegetation to further strengthen the banks and provide better habitat for surrounding wildlife.

The District implemented different restoration techniques on the upper and lower portions of the creek bank. They installed the cottonwood barbs in the stream along the lower bank, and planted a total of 9,000 shrubs between the barbs along the entire project area to help protect the lower bank from the erosive force of the water. To help stabilize the bank area above stream level, they regraded the upper bank to reduce the steep slope, planted upland native tree and shrub species, seeded the bank with an upland grass seed mix, and installed an irrigation system and wire fencing to exclude livestock.

The District will monitor the site to determine the project's ability to meet the established goals. District staff will take photographs and video footage of the site to determine the survival of vegetation and the accumulation of sediment between the barbs. Throughout the course of the project, District staff established benchmarks and recorded cross-sectional surveys to help the team quantitatively determine the amount of deposition or scouring that will occur over the next several years.

The effectiveness of the restoration project has been tested by a couple of high-water events. The treatments are working well to stabilize the streambank and prevent erosion. Sediment is being deposited behind the barbs, and the vegetation is holding the existing bank in place. The District plans to use this stabilization method on other sandy bluffs in the area if the project continues to function well during future high-water events. **[Updated January 2002.]**

Project Title: Elk Creek Restoration Project
Five-Star Grant: \$10,000
Grant to: Lewis & Clark Conservation District
Location: Augusta, Montana
Grant Year: 2000

Original Project Description:

The Lewis and Clark Conservation District will work in partnership with private landowners, teachers from Augusta schools, Montana Department of Fish, Wildlife and Parks, and the U.S. Fish and Wildlife Service to restore 3 miles of stream banks and 1½ miles of Elk Creek. The project will involve restoring and realigning the stream channel, as well as protecting and replanting native vegetation along stream banks. In addition, private landowners and ranchers will have the opportunity to learn about long-term grazing management techniques to protect Elk Creek. Other community partners are the Augusta school students, who will help with revegetation work, including willow plantings and grass sod mat placement. The students will also learn about stream restoration and protection issues in their classrooms.

Project Update:

Stream and riparian restoration work on 1,865 feet of Elk Creek was completed in May 2001. The work included actual in-stream restoration to improve fish habitat and stream function, along with stream bank shaping and revegetation to improve the riparian habitat. Augusta school students assisted with revegetation efforts by planting willow sprigs along the stream bank. The project was awarded an

extension to complete its objectives. Future plans are to conduct restoration activities in spring 2002 and complete project objectives under this grant award. **[Updated January 2002.]**

Project Title: Submerged Aquatic Vegetation Restoration in the Anacostia and Potomac Rivers
Five-Star Grant: \$10,000
Grant to: Alliance for Chesapeake Bay, Inc.
Location: Washington, DC
Grant Year: 2000

Original Project Description:

Restoration of submerged aquatic vegetation (SAV), which serves as critical feeding, nursery, and refuge habitats for a number of ecologically and economically valuable species, is a priority in the Chesapeake Bay watershed. The Alliance for the Chesapeake Bay, in partnership with the District of Columbia, the Living Classrooms Foundation, the Conservation Corps, and the Underwater Adventure Seekers Dive Club, will restore SAV in the lower Anacostia River and in the Potomac River. The project involves training teachers and students from at least three schools in the District of Columbia to grow approximately 1,500 aquatic plant seedlings. Students will receive classroom education on SAV restoration as well as participate in transplanting the seedlings they raise in the classroom.

Project Update:

The Alliance for the Chesapeake Bay worked with two District schools throughout the spring semester to increase local high school students' awareness and knowledge of their environment and to restore critical aquatic habitat for living resources in the Anacostia River. Alliance staff taught the students and their teachers about the Chesapeake Bay watershed and trained and supervised them in raising SAV, specifically wild celery (*Valisneria americana*), in the classroom. The primary focus of this project was to engage high school students in environmental stewardship and education, with an emphasis on the Chesapeake Bay, that will lead to greater participation in the Bay restoration effort.

After conducting their experiments on the growth of SAV, students from Theodore Roosevelt High School and H.D. Woodson Senior High School participated in a field trip to assist the Alliance and other project partners in transplanting the SAV into the Anacostia River. The students participated in the planting process by preparing the plants for transplant from boats alongside the divers who planted the SAV. The divers planted some 1,000 plants, a combination of wild celery grown by DC students and redhead grass (*Potamogeton perfoliatus*) acquired from Anne Arundel Community College. District students also participated in additional environmental education activities, such as water quality monitoring, during the field trip.

The Alliance expects this project to be a model that will be transferrable to other District schools for future science education. They hope to expand the program to make it more interdisciplinary while retaining the focus on environmental health both in the Anacostia River watershed and in a larger, regional context. Currently, the Alliance is seeking funding sources to continue the project. **[Updated January 2002.]**

Community-Based Restoration Partnerships

New Riverbanks at New River State Park

The following is excerpted from the December 2001 (Volume 15, Number 11) issue of The Steward, the newsletter of North Carolina Division of Parks and Recreation.

A project to restore eroded riverbanks and improve habitat in the New River was completed in September 2001 at New River State Park. The effort involved arranging natural, in-stream structures to divert river current away from 2,500 feet of sensitive riverbank at two locations and using bioengineering to stabilize those areas and reduce sedimentation in the river. “The project was necessary because land is being lost to the river,” explained Park Superintendent Jay Wild. “Banks had become unsafe and a great deal of sediment was washing into the New River, damaging aquatic habitat. The state park has lost about 20 feet of riverbank in several areas in the last 15 years.”

The nonprofit group New River Community Partners secured grants to fund the project—a \$148,000 grant from the North Carolina Division of Water Resources and a \$10,000 grant from the National Fish and Wildlife Foundation. New River Community Partners asked the North Carolina Division of Parks and Recreation to direct the project. To supplement the restoration efforts, New River Community Partners has begun using the foundation grant to educate the public about the project, through efforts such as workshops about streambank stabilization for area property owners.

Restoring the River

The initial stage of the restoration project targeted about 1,500 linear feet of riverbank. Contractors used clusters of boulders and rootwads to armor banks that had been seriously undercut by current. (Rootwads are stumps driven into the bank at an angle with roots left projecting into the waterway.) The contractors also placed log and rock vanes in the river to redirect current. (Vanes are natural low barriers placed completely in a waterway or set at an angle from the bank.)

The second phase of the project took place along a different 1,000 feet of riverbank. At that site, a large point bar had once been mined for sand and never reclaimed. As a result, the river was digging away at the back of the point bar and threatened to create an unstable island. Luckily, a natural bedrock vane existed at the upstream end of the point bar. To take advantage of this, contractors filled in the gaps in that vane with large boulders, which slowed water velocity and prompted the sediment carried by the river to drop out of suspension and begin rebuilding the point bar naturally.

Next, the project team began the bioengineering restoration of the riverbank—the structural use of plant materials to reinforce and stabilize the banks and provide wildlife habitat. The project team is planting naturally occurring grasses and woody plants as a buffer along severely eroded sections, and where possible, is removing non-native, invasive species. For more information see the park’s stabilization project web site at www.ils.unc.edu/parkproject/visit/neri/stab.html or view the entire newsletter article at www.ils.unc.edu/parkproject/parknews/steward/DEC01.pdf.

Canyon Creek Restoration Nears Completion

Canyon Creek, a tributary of the Metolius River in northeastern Washington, contains some of the most important spawning and rearing habitat for bull trout in the Metolius River system. Bull trout are listed as threatened under the Endangered Species Act, and Canyon Creek supports about 20 percent of the spawning bull trout along the Metolius River.

About 2 years ago restoration of Canyon Creek began when Scott Cotter, a U.S. Forest Service fisheries biologist, helped determine that an abandoned bridge crossing was restricting stream flow and contributing to excessive sediment deposits. Further study of the creek also revealed that stream crossings by recreational users, especially unrestricted horses and off-highway vehicles, further contributed to the sediment loads in the creek.

“High amounts of fine sediment can suffocate incubating bull trout eggs and young fry that are still in their nests,” explains Cotter. The sediment also fills in pools used as essential trout habitat.

Phase one of the project brought in the Oregon National Guard. Charlie Company 1249 worked under the direction of Forest Service fishery biologists to remove fill dirt that had been used as an old bridge abutment. The dirt was removed from the streambank and taken to a local gravel pit. In the next step of the project, the National Guard removed five large pieces of concrete embedded in the streambed and Forest Service employees worked with Job Corps crews, student groups, and Department of Corrections crews to naturalize the site by regrading the banks and planting native vegetation. Next, woody debris, including logs and rootwads, were placed into the stream to create a pool that would provide cover for rearing bull trout and establish vegetative islands in the stream. Department of Corrections crews constructed a variety of barriers to prevent horse and off-highway vehicle crossings. They used logs to designate a path for horse crossings and large logs and boulders to prevent motorized vehicle crossings along the creek. Youth Conservation Corps crews helped with the restoration by transplanting riparian vegetation, including alders and bunchgrass, to the site. The crews also posted signs educating recreationists about the presence of bull trout and indicating appropriate stream crossing sites.

The restoration efforts, especially the removal of the old bridge crossing and restriction of stream crossings, have reduced sedimentation in the stream. Native vegetation along the banks and the presence of in-stream woody debris have enhanced habitat for rearing trout. The riparian vegetation shades the stream, and the large pools created by the woody debris provide cool spots where the trout are thriving.

While conducting a stream survey, Oregon State University biologist Jens Lovtang made another encouraging discovery. Young Chinook salmon, experimentally released in the stream system, have also moved into the site and made their home in the deep pools of the restored area. The Oregon Army National Guard intends to ensure the success of the restoration project through continuing riparian planting and other restoration activities as necessary. For more information, visit www.nuggetnews.com/archives/20020508/front11.shtml or www.geocities.com/scott_cotter/fishprojects6.htm.

If you are part of an innovative community-based partnership that is working to restore river corridors or wetlands, we'd like to hear from you. Please send a short description of your partnership to restorationupdate@tetrattech-ffx.com.

Achieving Restoration Results

Streams Restored to Save the Shiner

The Iowa Natural Heritage Foundation (INHF) is pursuing creek restoration to protect the Topeka shiner, a federally endangered minnow. INHF is working in partnership with private landowners along Buttrick Creek in Greene County, Iowa, and the U.S. Fish and Wildlife Service (USFWS) Endangered Species Private Lands Program, the National Fish and Wildlife Foundation, and the Iowa Department of Natural Resources. The INHF is taking action because the Topeka shiner's prime habitat—small, meandering prairie streams with off-channel habitat—is disappearing. Habitat loss is due to many factors, including a falling water table, stream channelization, and loss of streamside prairie vegetation.

As a first step INHF decided to partner with private landowners along Buttrick Creek to restore Topeka Shiner habitat. Supported by a multiyear USFWS grant, INHF hired two independent natural land consultants to contact private landowners along the creek. The consultants identified three landowners interested in joining the program and then helped to select one to work with beginning in 2001.

To restore habitat on the first landowner's property, INHF worked with staff from Iowa State University, USFWS, and an independent contractor to design three in-stream structures and two riffle structures, and to restore an oxbow wetland. A local engineering firm helped to design the structures and restore the oxbow wetland. Meanwhile, INHF worked with the landowner to restore native prairie plants and remove undesirable trees along the stream. Thanks to the positive response by their first landowner partner, neighboring landowners are planning to join the INHF project during 2002. For more information contact Cathy Engstrom, INHF Communications Coordinator, at 515-288-1846, or see www.inhf.org/restorewhatslost.htm. *This article was adapted from "Restoring What We've Lost," an article featured in the Iowa Natural Heritage Foundation's spring 2002 magazine.*

Utilities Join Forces to Restore Riverbanks

Northeast Generation Company (NGC), a subsidiary of Northeast Utilities (NU), has been working with the Connecticut River Streambank Erosion Committee (CRSEC) to find a better and more environmentally suitable solution to stream bank erosion problems along the Turner Falls Pool section of the Connecticut River in Massachusetts. The bank stabilization projects are

a collaborative effort between Northeast Generation Services Company (NGS) and the Franklin Regional Council of Governments, both founding members of CRSEC. With roughly a dozen active members, the group worked to obtain matching federal grants to complete two bank restoration projects near Northfield Mountain's Pumped Storage Hydroelectric Project.

"The stewardship of this part of the Connecticut River is both a responsibility and a privilege," said John Howard, Northfield Mountain station manager. "NGC and NGS are proud to be recognized as environmental leaders and we feel extremely fortunate to have CRSEC members as committed partners in protecting this part of the Connecticut River," he stated.

The NU companies' work helped improve the wildlife habitat, aesthetics, and protected agricultural farmlands adjacent to the Turners Falls Pool area of the Connecticut River. Using innovative techniques to stabilize eroding riverbanks, NGC developed and implemented soft engineering techniques for six experimental projects where native plant materials stabilized the soil. This technique, used for centuries in China and India, involves positioning a stone toe and a slope of native vegetation along the river to strengthen severely eroded sections of the riverbank.

These improvements also enhance wildlife and fisheries habitat by helping the re-colonization of native flora and fauna, and they help prevent pollutants in runoff from the surrounding land from gaining direct access to the water body. Stabilizing the riverbank also preserves land along the Connecticut River that is used for both farms and pastures.

The bank stabilization projects are located along a 22-mile section of the Connecticut River between Vernon, Vermont, and Turners Falls, Massachusetts. To date, six sites consisting of more than 1 mile of severely eroded riverbank have been strengthened using bioengineering techniques. Another 1,300 linear feet are currently being stabilized, and restoration of another 4,800 linear feet is being proposed over the next 4 years.

Thanks to these efforts, NGC was named Outstanding Steward of America's Rivers by the National Hydropower Association. NGC's project was one of eight recognized. The projects selected for recognition were subject to a thorough evaluation by a five-member judging committee composed of two environmental representatives, two industry representatives, and the managing editor of *Hydro Review* magazine. Projects had to demonstrate significant environmental accomplishments beyond providing clean and renewable power. They were evaluated for challenge, collaboration, innovation and results.

Northeast Generation Company and Northeast Generation Services Company are part of Connecticut-based Northeast Utilities. These competitive energy businesses, along with NU's Select Energy companies, were formed at the start of electricity deregulation in New England.

For more information see the April 23, 2002, press release at www.selectenergy.com/events/frames/news_releases_frameset.asp or contact Donna Powell, Select Energy corporate headquarters, at (860) 665-2945.

If you are part of an innovative restoration project that has had positive results, we'd like to hear from you. Please send a short description of your project to restorationupdate@tetrattech-ffx.com.

Funding for Restoration Projects

Private Stewardship Program

The Private Stewardship Program provides grants and other assistance on a competitive basis to individuals and groups engaged in local, private, and voluntary conservation efforts that benefit federally listed, proposed, or candidate species, or other at-risk species. The U.S. Fish and Wildlife Service will award approximately \$10 million in federal funding under the Private Stewardship Program. A 10 percent match of cash or through in-kind contributions is required. The program will be available to private landowners and their non-federal partners. For more information, visit http://endangered.fws.gov/grants/private_stewardship.html.

Multistate Conservation Grants

Conservation grants may be awarded to conservation organizations for wildlife restoration projects identified by the International Association of Fish and Wildlife Agencies. Under this program, funds may be used for wildlife research projects, aquatic education, and habitat improvement projects. Projects must benefit at least 26 states, or a majority of the states in a region of the Fish and Wildlife Service. For fiscal year 2003, \$6 million in funds are available. For more information, visit www.cfda.gov/public/viewprog.asp?progid=1527.

Section 206 Aquatic Ecosystem Restoration Program

Section 206 of the Water Resources Development Act of 1996 provides authority for the U.S. Army Corps of Engineers to construct aquatic ecosystem restoration and protection projects. Such projects usually include manipulation of the hydrology in and along bodies of water, including wetlands and riparian areas. A project is adopted for construction only after a detailed investigation determines that the project will improve the quality of the environment, is in the best interest of the public, and clearly shows the engineering feasibility and environmental justification of the improvement. Applications for this program are accepted throughout the year and require a 35 percent cost share match. For more information, contact the U.S. Army Corps of Engineers, Portland District, Chief, Planning Branch, PO Box 2946, Portland OR 97208-2946; phone: 503-808-4733; e-mail martin.hudson@usace.army.mil.

Please send any news you have on funding mechanisms available to local community organizations to restorationupdate@tetrattech-ffx.com.

News and Announcements

Wetland-Rich Berkshire Taconic Landscape Featured on Educational Web Site

According to a June 21, 2002, press release, The Nature Conservancy (TNC) and Intel Corporation have added the Berkshire Taconic Landscape to TNC's "Last Great Places" web site (www.lastgreatplaces.org), citing not only the area's scenic, historic, and cultural attractions, but also its role as one of the key ecological gems remaining in southern New England. The new educational web site helps teachers, parents, children, residents, and others interested in nature, history and geography to learn more about the remarkable area, as well as some of the threats it faces.

Located in the three-state region of southwestern Massachusetts, eastern New York, and northwestern Connecticut, the 120,000-acre Berkshire Taconic landscape contains one of the largest, healthiest, and most diverse forest blocks remaining in southern New England. The wetlands that surround the mountainous forest are some of the best global examples of calcareous, or "sweet" water wetlands, and the entire landscape area is home to more than 150 rare and endangered species—one of the highest concentrations in New England. This integrated landscape has remained intact despite its location in the heart of the urban Northeast, but today it faces increasing development pressure affecting both its ecological and cultural heritage.

"The Berkshire Taconic Landscape, like other Last Great Places, is a unique area that harbors a concentration of rare species and offers excellent examples of endangered terrestrial and aquatic ecosystems," said Bill Weeks, executive vice president of TNC. "In selecting this and other Last Great Places, we consider the vulnerability of the site, the threats to it, and the ability to lessen those threats and sustain the diversity of life."

"Environmental responsibility is important to Intel, which is why we have supported the Explore the Last Great Places web site," said Terry McManus, Manager of Intel's Environmental Health and Safety Signature Projects. "So is education, especially building a love of science in younger students. The web site enables them and their parents and teachers to take a virtual tour of the Berkshire Taconic region and learn about its human history, geography, forests and wetlands, and diversity of life."

The Berkshire Taconic Landscape web site is the second Web-based tour in www.lastgreatplaces.org, joining the inaugural tour of the San Pedro River of Mexico and southern Arizona. Although its general point of reference is environmental conservation, the Berkshire Taconic web site investigates the many cultural, commercial, historical, and other dynamics that affect the natural environment. Compiled over the past year by a team of staff from TNC and Intel, content includes contributions by many regional experts, including ecologists, historians, geologists, naturalists, planners, and social scientists.

For more information contact Kerry Christly at The Nature Conservancy of Massachusetts, 617-227-7017 ext. 316, or e-mail kcrisley@tnc.org. To view the entire press release see <http://nature.org/aboutus/press/press687.html>.

Landowners Collaborate to Restore Oregon River

On May 16, 2002, the Oregon Watershed Enhancement Board (OWEB) awarded \$65,181 to the MidCoast Watershed Council to increase habitat for salmon through the placement of large logs in the river, stream fencing, planting trees, and wetland restoration along the South Fork of the Alsea River. The log placement will provide small, shallow pools for fish to spawn and rest; the tree plantings will help to stabilize the riverbank, as well as provide necessary shade to reduce river temperature; and the fencing will help keep livestock in predefined areas to allow vegetation to grow and water quality to improve. Through these actions, this project will address the limiting factors of low wood density and high stream temperatures, improving 1.5 miles of the South Fork to allow for better year-round habitat.

The most notable part of this project is that the landowners participating will be voluntarily setting aside portions of their land to help improve streamside conditions for salmon of all ages. According to Steve Trask, the primary project designer and manager, as well as a participating landowner, "When I was talking to my neighbors about becoming involved with this project, I asked them, 'What kind of legacy do you want to leave, one that has a long-term cost to the environment or one that has a long-term benefit to the environment?' Eventually we all agreed to leave the land better than we found it."

OWEB was created in 1999 and is charged with funding local voluntary efforts to improve water quality and quantity, enhance habitat for critical fish runs, and restore watersheds to support local economies. Funding comes from many sources, including a voter-approved 7.5 percent of lottery proceeds for the purpose of watershed restoration and protection. For more information see www.oweb.state.or.us/news/02-08Alsea.pdf or contact Kari Seely, Oregon Watershed Enhancement Board Public Information Coordinator, at 503-986-0056.

New York Announces \$150,000 in Funding for Jamaica Bay

On June 10, 2002, a New York State Department of Environmental Conservation (DEC) press release announced that the state will provide \$150,000 to the National Park Service to investigate the causes of intertidal marsh loss in Jamaica Bay.

"Jamaica Bay, with its complex of intertidal marsh islands, is a significant natural resource area, providing critical breeding and stopover grounds for hundreds of species of birds, as well as habitat for more than 80 species of fish," Commissioner Crotty said. "DEC is committed to working with our federal, state, and local partners to research the causes of marshland loss in the Bay and take aggressive steps to mitigate and prevent it. The funding being announced today will support projects to help us protect and restore critical wetlands within Jamaica Bay."

The funding is being made available as part of a comprehensive strategy developed by DEC to address documented loss of intertidal marsh land in the Jamaica Bay watershed over the past quarter-century.

DEC began an extensive wetland trend analysis in 1998 in an effort to evaluate the effectiveness of state and federal wetland protection efforts in marine areas of the state. Through examination of historical maps, aerial photographs, and other data, DEC has documented significant losses of vegetated tidal

wetlands, principally intertidal marsh areas, in marsh islands of Jamaica Bay. The trend analysis has shown that since 1974 the rate of loss of intertidal marsh islands is accelerating. The vegetated intertidal marsh is being converted to nonvegetated underwater lands.

As a result of DEC's findings, the National Park Service convened a Blue Ribbon Panel of experts in the field of marsh ecology for a 3-day conference in May 2001 to evaluate the loss of marsh islands in Jamaica Bay. The panel, which included scientists from the U.S. Geological Survey, Gateway National Resource Area, and the nation's top universities, identified a number of factors that could be contributing to the current conditions, including sediment displacement, sea level rise, wave energy, erosion, wildlife impacts, and water quality. The panel recommended that a research program be initiated to better evaluate the role of each of these factors so that a more effective restoration strategy can be developed.

DEC is partnering with the National Park Service to identify potential causes and contributing factors and to undertake pilot restoration work in the national Gateway Recreational Area, where some of the most significant loss of wetlands has occurred. The National Park Service will use the \$150,000 to undertake six research projects this summer that were recommended by the Blue Ribbon Panel.

Two of the projects will focus on issues related to water quality that may be contributing to the marsh losses. A third project will look at the impact of waterfowl on marsh erosion. In addition, the National Park Service plans to conduct additional mapping work that will build on the baseline work conducted by DEC. The information gained from each of these projects will help scientists better understand what factors may be contributing to the loss of marsh land in the bay, as well as other areas of the state, and facilitate efforts to mitigate the loss and restore this critical aquatic resource.

The \$150,000 in funding is being made available through a special Environmental Benefit Project account that was set up as part of a 1994 consent order between DEC and the New York/New Jersey Port Authority. The account was created in response to violations stemming from the operation of JFK Airport and is to be used for environmental benefit projects in New York City.

For more information, contact Jennifer Post at 518-402-8000 or see the complete press release at www.dec.state.ny.us/website/press/pressrel/2002-76.html. More information about DEC's ongoing strategy to identify and address intertidal marsh loss in Jamaica Bay is available at www.dec.state.ny.us.

Upcoming Conferences and Events

New Listings

Wildlife Habitat Council 14th Annual Symposium: “Investing in Biodiversity”

November 18–19, 2002
Baltimore, Maryland

This conference is designed to help explain the economic, social, and cultural impacts of biodiversity conservation. The conference will be an opportunity to learn from agency and private sector specialists, explore imaginative approaches, and envision new partnerships for integrated habitat conservation strategies with concrete local actions. Presentations will address global biodiversity, ecological restoration, and environmental education for at-risk youth. In addition to the panel discussions, attendees will have the opportunity to attend one of five educational field trips, take part in a live-animal demonstration, and test their skills at the “Touch Table.” For more information visit www.wildlifehc.org/events/symposium.cfm or contact RCRA@wildlifehc.org; phone: 301-588-8994.

Chesapeake Bay Watershed Restoration Conference: Riparian and Wetland Stewardship

September 24–26, 2002
Baltimore, Maryland

This conference will allow attendees to share critical information regarding watershed conditions, riparian and wetland restoration science, and the tools and techniques used for watershed restoration. Much information applies to wetlands nationwide. Topics focus broadly on assessment and characterization of watershed conditions; riparian and wetland restoration science; and approaches, tools, and techniques for protection and restoration. For more information please contact Hannah Kirchner at 812-723-0088, e-mail hannahk@kiva.net, or visit the Potomac Conservancy web site at www.potomac.org. The conference is sponsored by the Potomac Watershed Partnership (Ducks Unlimited, USDA Forest Service, Maryland Department of Natural Resources, Virginia Department of Forestry), in conjunction with the Chesapeake Bay Foundation and Stroud Water Research Center.

Restore America’s Estuaries: Inaugural National Conference on Coastal and Estuarine Habitat Restoration

April 13–16, 2003
Baltimore, Maryland

The purpose of the conference is to mobilize the coastal and estuarine habitat restoration community to advance its knowledge, practice, pace, and success in habitat restoration. People with diverse perspectives and experiences will meet to focus on setting priorities for, planning and executing, and monitoring progress of coastal and estuarine habitat restoration. The program focus will include restoration best

practices, information and resource needs, community outreach, national and regional policy strategies, funding opportunities, partnerships, and restoration science and practice—including monitoring, evaluation, and adaptive management. The conference will address habitat restoration in coastal and estuarine areas of the United States, including the Great Lakes region, as well as transboundary initiatives and issues. For more information see www.estuaries.org.

Previous Listings

Riparian and Aquatic Ecosystem Monitoring: A Technical Training Workshop

Two sessions: July 23–27, 2001, and July 30–August 3, 2001
Forest Grove, Oregon

This 5-day workshop will train participants to use and to teach the use of data collection equipment and techniques for school- and citizen-based volunteer monitoring programs. Participants will work alongside scientists and Student Watershed Research Project staff in both lab and field settings. Topics to be covered include

- Ecosystem monitoring methods for biological, chemical, and physical attributes of streams and watersheds.
- Strategies for data management, reporting, and quality control.
- Watershed connections to enhance programs through curriculum integration and community resources.
- Program design and assessment, including site selection and safety.

Registration forms and other information are available on-line at www.swrp.org, or contact Stacy Renfro by e-mail at renfro@admin.ogi.edu or by phone at 503-748-1363.

To post your restoration news and announcements, please send information to restorationupdate@tetrattech-ffx.com.

Restoration-Related Web Sites

<http://erf.org>

The Estuarine Research Federation (ERF). ERF is an international organization whose purpose is to promote research in estuarine and coastal waters, to promote communication between members of affiliated societies, to conduct meetings, and to be available as a source of advice in matters concerning estuaries and the coastal zone. The ERF site offers educational resources for teachers and students about the science and management of estuaries, lagoons, and bays along coasts worldwide. The site also includes a newsletter, an updated list of coastal and estuarine-related meetings, a bulletin board, a list of job openings, and links to other coastal and estuarine resources on the Web. *This site offers educational information about coastal waters, including wetlands.*

www.upstreamconnection.com/WSEP/index.cfm

The Watershed Stewardship Education Program (WSEP) provides statewide training and materials to help Oregon's watershed councils, Soil and Water Conservation Districts, and urban and rural residents understand how watersheds work and how to apply this knowledge to watershed assessments, restoration project development, and water quality and habitat monitoring. The site describes WSEP's watershed management and restoration training programs, available watershed and restoration-related publications, and their watershed steward program. It is designed to get local volunteers involved in watershed restoration projects. *This site offers useful ideas for ways to encourage local citizens to become active in watershed restoration and protection.*

www.crcwater.org

Chehalis River Council. The Chehalis River Council was formed by volunteers in the river basin for the purpose of writing and implementing the Chehalis River Basin Action Plan. The Council has held public seminars, created the Chehalis Basin map, published guides on tree planting and water quality monitoring, created information brochures, published a newsletter, and compiled a resource library for water-related issues. *This web site provides numerous background materials dealing with watershed-wide restoration programs and also has links to a number of current water-related information sources.*

www.owla.org

Owasco Watershed Lake Association. The Owasco Watershed Lake Association, Inc., is a citizen-based association developed to protect water quality in Owasco Lake, one of New York's Finger Lakes. *The web site contains a stream classification tutorial that describes the benefits of riparian buffers, and it discusses streambank stability and the benefits of watershed assessments.*

www.salmonhabitat.org/nursery.htm

Salmon Habitat and River Enhancement (SHARE). Project SHARE was created in 1994 through the efforts of concerned landowners, salmon anglers, businesses, and various government agencies to protect and enhance Atlantic salmon habitat in the five Down East rivers of Maine. The organization is currently working on several water quality monitoring projects, developing a fish ladder restoration project, and creating a riparian wetland and native plant nursery. *The on-line reference library hosted by this site would be useful for anyone looking for information on restoring riparian areas to benefit fish habitat.*

www.conservation.state.mo.us/nathis/vegman

Missouri's Vegetation Management and Habitat Restoration Page. This page provides guidance for restoring Missouri land to provide habitat for native plant and animal species. The following topics are discussed in depth: prairie and wetland restoration, wildlife-friendly farmland, fire as a management tool, and waterfowl habitat. *These documents would be useful for anyone seeking information on habitat restoration in the Midwest.*

www.deq.state.va.us/oysters/homepage.html

The Virginia Oyster Heritage Program. This web site describes Virginia's efforts to restore oyster beds along its coastal areas. The web site includes a fact sheet on the benefits of oysters for water quality and coastal habitat restoration and describes reef restoration sites in Virginia. *This web site provides a variety of information on the influence of healthy oyster populations on the success of other coastal habitat restoration projects.*

www.ontarionature.org/enviroandcons/wetlands/wet1.html

Catalogue of Great Lakes Wetland Information Resources. This web page was developed to help organizations increase public awareness regarding Great Lakes wetlands and public commitment to their preservation. The catalogue provides information on wetland values, protection, rehabilitation, and related policies and legislation. It also encourages involvement by individuals, groups, corporations, and industries in all aspects of Great Lakes wetland protection and rehabilitation. *This page provides a variety of information helpful in increasing public involvement in the wetland protection and restoration process.*

www.on.ec.gc.ca/wildlife/factsheets/fs_amphibians-e.html

Amphibians and Reptiles in Great Lakes Wetlands: Threats and Conservation. This on-line fact sheet describes the importance of wetlands to people, to the ecology of the biosphere as a whole, and especially to the amphibians and reptiles that depend on wetlands for their survival. It examines some of the various threats to the remaining Great Lakes wetlands and some of the ongoing efforts to protect existing wetlands and restore degraded ones. *This web page is a good source of basic information on the importance of wetland restoration to humans, amphibians, and entire ecosystems.*

www.ks.nrcs.usda.gov/wetlands/wetindex.htm

Better Wetlands. This web site outlines more than a dozen ideas to improve restored wetlands for wildlife and personal enjoyment. Restoration strategies include regulating water levels; planting trees, native grasses, and wildflowers; and creating habitat in wetlands and surrounding uplands. *This web site provides details on a variety of wetland restoration strategies.*

Let us know about your restoration-related web site. Please send relevant URLs to restorationupdate@tetrattech-ffx.com.

Information Resources

Restoration Newsletter

by Oregon Sea Grant

Oregon Sea Grant offers *Restoration*, an on-line newsletter that seeks to provide objective information about the scientific, economic, political, and social issues surrounding salmon and watershed health and restoration. Issues are available from 1994 to the present at <http://seagrants.orst.edu/sgps/restoration/index.html>.

Reforestation Publications

by Oregon State University Extension and Experiment Station

Available for download at <http://eesc.orst.edu/agcomwebfile/EdMat/edmatindexfor.html>, these publications explore reforestation issues. Sample titles include *Successful Reforestation: An Overview*, *The Care and Planting of Tree Seedlings on Your Woodland*, *Selecting and Buying Quality Seedlings*, and *Site Preparation: An Introduction for the Woodland Owner*. These publications would be helpful in establishing seedlings in riparian areas.

Aquatic Habitats Guidelines

by Washington Department of Fish and Wildlife

In 1999 the Washington Departments of Fish and Wildlife, Ecology, and Transportation partnered with the U.S. Army Corps of Engineers and the U.S. Fish and Wildlife Service to develop technical assistance guidance for those who want to protect and restore salmonid habitat. This resource provides guidance for the promotion, protection, and restoration of fully functioning marine, freshwater, and riparian habitat through comprehensive and effective management of activities affecting Washington's aquatic and riparian ecosystems. This resource is available on-line at www.wa.gov/wdfw/hab/ahg.

If you'd like to publicize the availability of relevant information resources, please send information to restorationupdate@tetrattech-ffx.com.